

REMARKS

Favorable reconsideration is respectfully requested.

Upon entry of the above amendment, the claims will be 39 and 42 to 62.

The above amendment is responsive to points set forth in the Official Action.

With regard to the objection to the specification on page 3 of the Official Action, this has been corrected by the above amendment.

With regard to the objection to the claims bridging pages 3 and 4 of the Official Action, claims 39 and 50 have been corrected as suggested by the Examiner.

Turning to the rejection of the claims under 35 U.S.C. 112:

- I. The rejected terminology has been deleted from claim 54.
- II. With respect to claim 46, the dependency has been corrected.

With regard to claim 57, there is antecedent basis for the terminology in issue in claim 39 on which claim 57 depends.

With regard to claim 58, the term "layer" has been deleted so that there is now antecedent basis.

Claims 39 to 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dordi et al. (U.S. 6,267,853 B1) in combination with Chen et al. (U.S. 6,565,729 B2) and Mayer et al. (U.S. 6,309,981 B1).

Further, claims 63 to 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dordi et al. (U.S. 6,267,853 B1) in combination with Chen et al. (U.S. 6,565,729 B2) and Mayer et al. (U.S. 6,309,981 B1).

These rejections are respectfully traversed.

Independent claim 39 recites *inter alia* that the first plating liquid has a higher polarization than the second plating liquid. According to the present invention, when there is a thin portion in the seed layer, the thin portion can be reinforced by performing the electroplating in the first plating liquid, which has a higher polarization than the second plating liquid, to provide a complete seed layer, and a metal such as copper can be filled into the fine recesses by performing the electroplating in the second plating liquid to form a plated film having a flat surface.

This is neither disclosed nor suggested by the cited references, alone or combined.

Specifically, Chen teaches that the additional metal is electrolytically bulk deposited on the enhanced seed layer within a principle fluid chamber of a reactor under conditions in which the deposition rate of the electrolytic deposition process is substantially greater than the deposition rate of the process to repair the metal seed layer. However, the deposition rate of the electrolytic deposition process depends on a current value with no connection to a polarization of the plating liquid. Thus, the deposition rate of the electrolytic process increases in proportion to a current value.

The inside of a contact hole, especially the side wall on the lower side of a contact hole, generally has a low conductivity (high resistance, i.e. high deposition potential) because of the thinness of the seed layer, and therefore a metal plating is hard to deposit thereon with the use of a plating liquid having a low polarization. According to the present invention, by using as the first plating liquid, a plating liquid which has a high polarization and which allows metal deposition only when a high voltage is applied, metal film can be deposited evenly on the entire wall of the surface of the seed layer having different thickness and deposition potential.

This concept is neither disclosed nor suggested by the cited references, alone or combined.

For the foregoing reasons, it is apparent that the rejections on prior art are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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